REMARKS/ARGUMENTS

Reconsideration of this application is respectfully requested.

The rejection of claims 1, 2, 5 and 7 under 35 U.S.C. §103 as allegedly being made "obvious" based on Li '932 in view of Aharoni '694 is respectfully traversed.

Applicants use transmission of a first data part to test a link to detect its available transmission capacity. Once the available transmission capacity of the link has been determined, then a choice is made amongst alternative second data parts as a function of that determination – and then the chosen second part (and any remainder of the first part) is transmitted.

In addition, to make the patentable distinction of Applicants' claims even more starkly apparent, independent claim 1 has been amended so as to incorporate the sub-stance of original dependent claim 4. Now, therefore, independent claim 1 also requires the first data part to represent an audio signal, while the alterative second parts are alternative sets of associated video data encoded at respective different compression rates and intended for presentation simultaneously with the audio data.

Thus, Applicants' claimed invention permits all the video data to be downloaded at an optimum bandwidth utilization from the very start of downloading video.

As will be explained in more detail below, neither Li nor Aharoni teaches such an arrangement.

To speed allowance of this application, claim 7 has been cancelled without prejudice and/or disclaimer.

The Examiner refers to Li at paragraphs [0032]-[0042]. At paragraph [0032], Li recites:

- 8 -

> "[t]he transmission scheduler 30 first sends the base layer 20 to the decoder
> 40 as soon as the scheduler receives it, with minimal or no delay. Then the
> scheduler 30 then sends the enhancement layers 22, 24, 26 to the decoder
> 40 after the base layer 20 has been sent."

However, there is no disclosure here of using transmission of the first part to test
the link to detect available transmission capacity. In fact, Li does not appear to choose
between alternative second parts as a function of data indicative of the available trans-
mission capacity. The conclusion is that there is no disclosure in Li of at least steps (b)
and (c) of claim 1 and, as a result, no further part is chosen, as required in step (d) of
claim 1.

The Examiner acknowledges that Li fails to describe "receiving data indicative of
the available transmission capacity". Li also does not teach receiving data indicative of
the available transmission capacity and using the received data as a basis for choosing
between the alternative second parts as required by claim 1.

Li goes on to clarify that "[s]ending additional enhancement layers 24, 26 con-
tinues until a maximum time period has elapsed from the time the base layer 20 was
sent". Hence, Li describes data transfer that is time-limited, rather than bandwidth-
limited, in that all layers will be downloaded according to Li if sufficient time is available
to download the layers within the given bandwidth.

The Examiner also acknowledges that Li fails to describe data having at least two
alternative second parts. Rather than alternatives, the layers of Li are cumulative parts of
a video image. Which ones of these parts are downloaded is not selected by the arrange-
ment of Li, but is rather dictated by the time-restraint, as identified above. The aim in Li
is always to send all parts, starting with the lowest-resolution part and working up
through successively higher-resolution parts. The reality is that some higher-resolution
parts may not be downloaded (or not downloaded in full) due to time restraints.

Li is based on a download scheme for video data that is fundamentally different to the arrangement set out in claim 1. Whereas in claim 1 only one video file from a range of alternatives is selected for download, Li fails to describe data having at least two alternative second parts. Rather than alternatives, the video files of Li are cumulative parts of a video image, each successive file providing incremental information to improve on that provided in previous parts. The skilled reader of Li would appreciate that the way in which video information is distributed between the cumulative parts is designed for a successive download scheme. The skilled reader would appreciate that the successive download scheme (which is a fundamental aspect of Li) automatically guarantees that the highest bandwidth part supported by the network will be provided. Hence, the problem of determining what is the highest bandwidth part supported by the network does not arise in Li. The skilled reader would have no motivation to investigate this issue and no motivation to modify the scheme of Li by introducing elements set out in Aharoni.

Notwithstanding lack of motivation, the Examiner seeks to combine Li with Aharoni.

Aharoni describes a scheme for downloading video in which each frame is represented by multiple alternative files relating to different bandwidth files. Aharoni teaches testing network bandwidth and selecting a file to download depending on the detected network bandwidth.

According to Aharoni, packets containing video signal data are used to test the network bandwidth and, necessarily, are sent with a relatively low bandwidth (as illustrated in Fig. 10 of Aharoni), at least in the initial "scanned" phase and until a measure of the true bandwidth has been achieved. As set out in Aharoni at 13:21-36, the number of bytes is increased slowly over time until saturation of the network bandwidth is detected.

Hence, both Li and Aharoni result in a low, initial transfer rate for video data. This low initial data transfer rate could be addressed either by the receiver initially presenting a low-quality version of the video signal while waiting for the higher-quality video parts to be transferred, or by the receiver buffering large amounts of data until it is able to present an image of acceptable quality.

Claim 1 has been amended by introducing the content of claim 4 so as to more clearly distinguish the invention from the prior art. Claim 1, as now amended, is restricted to sending a first part to explore the bandwidth of the link in which first part contains data from a different signal (i.e., audio) to the signal of the second part (i.e., related video). Claim 1, as amended, is directed to a novel download scheme devised by Applicants so that the second (e.g., video) signal can be sent as a high-quality signal from the inception of video download. Advantageously, this overcomes disadvantages of known arrangements by allowing the receiver to present high-quality data without the need for extensive buffering. It is noted that the disadvantages identified by Applicants in the known methods are not discussed in the prior art, and the skilled reader would find no pointers there that would guide them to the present invention.

The Examiner has rejected claim 4 (now amended claim 1) on the grounds that transmitting audio and video separately is known. Then Examiner cites Teng '668 to support this. Teng does indeed disclose separate audio and video transmission, but does not describe sequential transmission, i.e., sending audio first, then video.

In fact, Teng requires the audio and video to be transmitted simultaneously, although this is not apparent from the section of Teng cited by the Examiner. As indicated by the Examiner, at 2:11 Teng recites "[t]he audio and video packets are transmitted separately and independently", and at 2:61, Teng recites "...the audio and video packets are received separately and independently at each receiver station".

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However, the skilled reader would recognize instantly that, in fact, Teng is describing audio and video being sent simultaneously. The "independence" in the above citations from Teng refers to transmission and reception over the LAN, i.e., the separate packetization of the audio and video over a packet-based network. The skilled reader would appreciate that the audio and video data of Teng is re-synchronized before play-back. As such, the skilled reader would expect Teng to be using continuous receipt of both audio and video at the receiver station. This expectation would be conformed by the reference in Teng to the source station operating in the "push mode" (see 2:45-50). The skilled reader would understand that push mode involves the audio and video being trans-mitted simultaneously.

None of the prior art cited by the Examiner, whether taken alone or in combina-tion, teaches the novel method for improved download across a network of unknown bandwidth devised by Applicants.

The rejection of claim 3 under 35 U.S.C. §103 as allegedly being made "obvious" based on Li/Aharoni in further view of Nakamura JP '553 is also respectfully traversed.

Fundamental deficiencies of both Li and Aharoni have already been noted above with respect to parent claim 1. Nakamura does not supply those deficiencies. Accord-ingly, it is not believed necessary at this time to discuss the additional deficiencies of this allegedly "obvious" three-way combination of selected bits and pieces of references.

The rejection of claim 4 under 35 U.S.C. §103 as allegedly being made "obvious" based on Li/Aharoni in further view of Teng '668 is also respectfully traversed.

As noted above, the substance of claim 4 is now found in independent claim 1 – and reasons for traversal of this ground of rejection have already been noted above with respect to independent claim 1.

The rejection of claim 6 under 35 U.S.C. §103 as allegedly being made "obvious" based on Li/Aharoni in further view of Yamamoto '425 is also respectfully traversed.
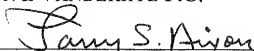
Once again, fundamental deficiencies of both Li and Aharoni have already been noted above with respect to parent claim 1. Yamamoto does not supply those deficiencies. Accordingly, it is not believed necessary at this time to discuss the additional deficiencies of this allegedly "obvious" combination of references.

Accordingly, this entire application is now believed to be in condition for allowance, and a formal notice to that effect is respectfully solicited.

Respectfully submitted,

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